## WHAT IS CLAIMED IS:

1. A method for measuring crimp characteristics of fibers in a moving crimped tow, said method comprising the steps of:

a) illuminating said crimped tow with a continuous wave light source;

b) acquiring a non-interlaced video image of the crimped tow;

c) digitizing said video image;

d) processing said image; and

e) displaying crimp characteristics based on said processed image.

2. The method according to claim 1, wherein said video image is digitized by a camera.

3. The method according to claim 2, wherein said video image is acquired by said camera.

4. The method according to claim 1, wherein said video image is digitized by a frame grabber.

5. The method according to claim 1, wherein said processing comprises:

i) dividing the image into a series of horizontal bands;

ii) constructing an intensity profile of each of said bands by averaging pixel intensity of horizontal lines of each of said bands;

iii) identifying crimp peaks for crimps having intensity exceeding an operator-specified threshold;

iv) calculating and storing the distance of neighboring crimp peaks for all peaks identified in step iii);

v) grouping the crimp peaks into a crimp type category according to the calculated distance in step iv); and

vi) repeating steps ii) to v) until all image bands are measured.

6. The method according to claim 1, further including the step of communicating measurement results to a selected one of a plurality of peripheral devices to effect on-line adjustments to selectable parameters of said crimped tow.

7. The method according to claim 1, further including the step of processing start-up portions of said crimped tow and signalling a normal condition upon said start-up portions satisfying pre-defined criteria.

8. The method according to claim 1, wherein said step of illuminating by said continuous wave light source includes adjusting said light source depending upon detected conditions.

9. A system for measuring crimp characteristics of fibers in a moving crimped tow, said system comprising:

a processor and associated stored program;

a continuous wave light source positioned over said moving crimped tow for illuminating a section of said moving crimped tow;

at least one progressive scanning camera for capturing at least one non-interlaced video image of said section of said moving crimped tow;

digitizing means for digitizing said at least one non-interlaced video image into digital data;

processing means for said digital data using said processor and associated stored program; and

a display for displaying crimp characteristics based on said processing of said data.

10. The system according to claim 9, wherein said digitizing means is provided by said at least one progressive scanning camera.

11. The system according to claim 9, wherein said digitizing means is a frame grabber.

12. The system according to claim 9, wherein said processor and stored program processes said data by identifying crimp

peaks for crimps having a value exceeding a preset threshold and calculating crimp frequencies between neighboring crimp peaks.

13. The system according to claim 9, further including means for processing start-up portions of said crimped tow and means for signalling a normal condition upon said start-up portions satisfying pre-defined criteria.

14. The system according to claim 9, wherein said processing means includes means for dividing said non-interlaced image into a series of horizontal bands and for establishing an intensity profile of each of said bands by averaging pixel intensity of sequential horizontal lines within each of said bands.

15. The system according to claim 9, wherein said processor processes said data as minima and maxima intensity profiles wherein a maxima is labeled as a crimp peak if difference in intensity between said maxima and its two neighboring minima exceeds an operator-specified intensity threshold value.

16. The system according to claim 9, wherein said processor calculates distances of neighboring crimp peaks, compares said distances with operator-specified thresholds, groups said crimp peaks into one of a micro, normal or large categories, and tabulates overall crimp statistics for said non-interlaced image.

17. The system according to claim 9, wherein said processor and stored program processes said data by identifying crimp peaks for crimps having a value exceeding a preset threshold and calculating crimp frequencies between neighboring crimp peaks.

18. The system according to claim 9, further including means for processing start-up portions of said crimped tow and means for signalling a normal condition upon said start-up portions satisfying pre-defined criteria.

19. The system according to claim 9, wherein said processor communicates measurement results to at least one of a plurality of peripheral devices for configuring said system depending on predetermined specifications.

20. The system according to claim 9, including a plurality of cameras for substantially covering a full width of said moving crimped tow.

21. The system according to claim 9, wherein said processor and stored program control a switch board for selectively receiving signals from one of said plurality of cameras.

22. A system for measuring crimp characteristics of fibers in a moving crimped tow, said system comprising:

a processor and associated stored program;

a continuous wave light source positioned over said moving crimped tow for illuminating a section of said moving crimped tow;

a plurality of progressive scanning cameras for substantially covering a full width of the moving crimped tow, each one of said plurality of progressive scanning cameras capturing a non-interlaced video image of said section of said moving crimped tow;

digitizing means for digitizing the non-interlaced video image of each one of said plurality of cameras into digital data;

processing means for said digital data using said processor and associated stored program and

a display for displaying crimp characteristics based on said processing of said data.

23. The system according to claim 22, wherein said processsor and stored program control a switch board for selectively receiving signals from one of said plurality of cameras.